

## MCEC Promotions



### Edwin Dollekamp

#### Dynamics of water between graphene and mica

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“I am most proud of the discovery of an asymmetry in the wetting behavior of the confined water film between graphene and mica for positive and negative applied charges to the graphene. This observation is the hardest to find.”

– *Edwin Dollekamp*

#### **What was your dissertation about?**

In my thesis, I cover the dynamic properties of water on mica, covered with a graphene coating. Different dynamics are studied, e.g. electrolysis of the confined water molecules to hydrogen nanobubbles, the influence of charges on the graphene, and the influence of confined molecules on the mechanical properties of the graphene. The studies expand our experimental knowledge of confined water which will find applications in future devices.

#### **What result from your research are you most proud of?**

The result I am most proud of is the discovery of an asymmetry in the wetting behavior of the confined water film between graphene and mica for positive and negative applied charges to



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the graphene. This observation is the hardest to find. We coincidentally found this behavior while studying graphene nanobubbles.

### How do you look back on your time as a MCEC PhD?

I look back on a very good time with MCEC. I obtained a lot of knowledge about e.g. catalysis and it brought me into contact with great fellow PhD students/postdocs/staff who were all motivated to contribute to multiscale catalysis and energy conversion.

In [this interview](#) from 2017, you mention considering to "continue as a postdoc, or working at an R&D department of a company in the area of physics". Are any of these plans concrete yet?

I will continue as a postdoc at the European Synchrotron Radiation Facility (ESRF) in Grenoble, France. Here I will study the influence of strain on the optoelectronic properties of thin semiconductor membranes. As I'm still active as a triathlete, mountain biker and breakdancer, I hope to continue with triathlon in France and I will definitely explore the French Alps with the mountain bike.

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